

Unified Watershed Assessments and Restoration Priorities, Arkansas

UNIFIED WATERSHED ASSESSMENTS

The unified watershed assessments and watershed restoration priorities in Arkansas were cooperatively developed from participants representing various state and federal agencies. This assessment was sent to the list of agencies, groups, and individuals in Appendix A. A working group consisting of: Diane K. Beeman, USFWS; Ken Brazil, ASWCC; Mike Daniels, UA-CES; Bill Keith, ADPC&E; Lyle Godfrey, ADH; Reed Green, USGS; John Terry, USGS; Andrew Hudson, NRCS; Bob Price, NRCS; Bob Morgan, ASWCC; Jane Jones Schulz, NHC; and Pam Smith, NRCS (1) gathered information to be used in the assessment, (2) made preliminary prioritization, and (3) prepared materials for public dissemination.

Unified watershed assessments were developed through a cooperative integration of existing assessment reports and processes using existing and appropriate data and information. In addition, professional judgement and personal knowledge of the working group was used to assess the watersheds. Watersheds defined by the U.S. Geological Survey (USGS) 8-digit hydrologic units were used (See Figure 1) for the evaluation and assessment process. The condition of the 8-digit watersheds was determined, either directly or by aggregating assessments of smaller watersheds within. Appendix B contains maps of relevant data sets. Additionally other unmapped data was used. Nationally, the 8-digit hydrologic unit scale will serve as the common scale for reporting the results of watershed assessments and to help target resources. Each 8-digit unit was assessed based on the characteristics and conditions of waters within and the overall health of the aquatic system using the following framework:

Category I – Watersheds in Need of Restoration. These watersheds do not now meet, or face imminent threat of not meeting, clean water and other natural resource goals. Category I watersheds were based on the number and type of water bodies meeting clean water and other natural resource goals (e.g. extraordinary resource waters, miles of streams, etc.). The following factors were considered in assessing Category I watersheds:

- 8-digit hydrologic unit watersheds containing Arkansas Department of Pollution Control and Ecology 303(d) impaired streams;
- 8-digit hydrologic unit watersheds containing Arkansas Department of Health monitored drinking water systems with multiple occurrences of constituents recorded above maximum contaminant or action levels;
- 8-digit hydrologic unit watersheds containing Arkansas Department of Heritage streams with imperiled or critically imperiled aquatic species; and
- 8-digit hydrologic unit watersheds containing Arkansas Soil and Water Conservation Commission section 319 priority watersheds.

Category II – Watersheds Meeting Goals, Including Those Needing Action to Sustain Water Quality. These watersheds meet clean water and other natural resource goals and standards and support healthy aquatic systems. All such watersheds need the continuing implementation of core clean water and natural resource programs to maintain water quality and conserve natural resources. The following factors were considered in assessing category II watersheds:

- 8-digit hydrologic unit watersheds containing Arkansas Department of Pollution Control and Ecology 303(d) impaired streams;
- 8-digit hydrologic unit watersheds containing Arkansas Department of Pollution Control and Ecology 303(d) concern streams;
- 8-digit hydrologic unit watersheds containing Arkansas Soil and Water Conservation Commission section 319 priority watersheds;
- 8-digit hydrologic unit watersheds containing USDA Natural Resources Conservation Service environmental quality incentive program (EQIP) projects;
- 8-digit hydrologic unit watersheds containing Arkansas Department of Heritage streams with imperiled or critically imperiled aquatic species; and
- 8-digit hydrologic unit watersheds containing Arkansas Department of Health monitored drinking water supplies listed as surface water or ground water under direct influence of surface water.

Category III – Watersheds with Pristine/Sensitive Aquatic System Conditions on Lands Administered by Federal, State, or Tribal Governments. States/tribes work cooperatively with federal land managers to identify watersheds with exceptionally pristine water quality, other sensitive aquatic system conditions, and drinking water sources that are located on lands administered by federal, state, or tribal governments. Pristine Conditions reflect unmeasurable impacts from point or nonpoint sources. Sensitive Conditions include rare and endangered, restricted endemics, and are known to be intolerant to environmental disturbances. These areas include currently designated and potential candidate Wilderness Areas, Outstanding Natural Resource Waters, and Wild and Scenic Rivers.

Category IV – Watersheds with Insufficient Data to Make an Assessment. These watersheds lack significant information, critical data elements, or the data density needed to make a reasonable assessment at this time. The majority of the waters in this category are in the Mississippi River Basin. This waterbody is the subject of multi-state and multi-agency investigations and activities in Arkansas will not have a measurable affect on the Mississippi River.

The 58 watersheds were classified as:

- Category I - 17;
- Category II, - 31;
- Category III, - 28;
- Category IV - 10.

Table 1 lists the categorization of the 8-digit hydrologic unit and Figure 2 is a map of the categories. Many category I, II, and IV watersheds were also assessed as category III.

Table 1. Watershed assessment by 8-digit hydrologic unit.

	Hydrologic Unit Number	Hydrologic Unit Name	I Watersheds not meeting, or facing imminent threat of not meeting, clean water or other natural resource goals.	II Watersheds meeting goal but needing action to sustain water quality	III Watersheds with pristine/ sensitive aquatic system conditions on federal, state, or tribal lands	IV Watersheds where more information is needed to assess conditions
1	08010100	Lower Mississippi-Memphis				
2	08020100	Lower Mississippi-Helena				
3	08020203	Lower St. Francis				
4	08020204	Little River Ditches				
5	08020205	L'anguille				
6	08020301	Lower White-Bayou Des Arc				
7	08020302	Cache				
8	08020303	Lower White				
9	08020304	Big				
10	08020401	Lower Arkansas				
11	08040402	Bayou Meto				
12	08030100	Lower Mississippi-Greenville				
13	08040101	Ouachita Headwaters				
14	08040102	Upper Ouachita				
15	08040103	Little Missouri				
16	08040201	Lower Ouachita-Smackover				
17	08040202	Lower Ouachita-Bayou De Loutre				
18	08040203	Upper Saline				
19	08040204	Lower Saline				
20	08040205	Bayou Bartholomew				
21	08040206	Bayou D'arbonne				
22	08050001	Boeuf				
23	08050002	Bayou Macon				
24	11010001	Beaver Reservoir				
25	11010003	Bull Shoals Lake				
26	11010004	Middle White				
27	11010005	Buffalo				
28	11010006	North Fork White				
29	11010007	Upper Black				
30	11010008	Current				
31	11010009	Lower Black				

	Hydrologic Unit Number	Hydrologic Unit Name	I Watersheds not meeting, or facing imminent threat of not meeting, clean water or other natural resource goals.	II Watersheds meeting goal but needing action to sustain water quality	III Watersheds with pristine/sensitive aquatic system conditions on federal, state, or tribal lands	IV Watersheds where more information is needed to assess conditions
32	11010010	Spring				
33	11010011	Eleven Point				
34	11010012	Strawberry				
35	11010013	Upper White-Village				
36	11010014	Little Red				
37	11070206	Lake O' the Cherokees				
38	11070208	Elk				
39	11070209	Lower Neosho				
40	11110103	Illinois				
41	11110104	Robert S. Kerr Reservoir				
42	11110105	Poteau				
43	11110201	Frog-Mulberry				
44	11110202	Dardanelle Reservoir				
45	11110203	Lake Conway-Point Remove				
46	11110204	Petit Jean				
47	11110205	Cadron				
48	11110206	Fourche La Fave				
49	11110207	Lower Arkansas-Maumelle				
50	11140105	Kiamichi				
51	11140106	Pecan-Waterhole				
52	11140108	Mountain Fork				
53	11140109	Lower Little				
54	11140101	Mckinney-Posten Bayous				
55	11140203	Loggy Bayou				
56	11140205	Bodcau Bayou				
57	11140302	Lower Sulphur				
58	11140304	Cross Bayou				

Watershed Restoration Priorities

Watershed restoration priorities were selected with special attention to watersheds most in need of restoration and protection through the year 2000. Category I watersheds most in need of restoration were identified by grouping the 17 watersheds into high (most in need of restoration), medium, and low priority. Seven watersheds were identified as high priority.

Each of the seven high priority watersheds were evaluated and ranked by group consensus which resulted in priority assignments of 1 through 7, one being the highest priority (Figure 3):

1. 11010001 – Beaver Reservoir,
2. 11140109 – Lower Little,
3. 11110103 – Illinois,
4. 11010012 – Strawberry,
5. 08040205 – Bayou Bartholomew,
6. 11010014 – Little Red, and
7. 11110205 – Cadron.

Numerous factors were considered in selecting watershed restoration priorities including the category I assessment factors, as well as others. These factors reflect available data and existing assessments relevant to the watershed. The seven, 8-digit hydrologic unit watersheds that were identified as most in need of restoration (or degradation avoidance) were ranked considering all factors pertaining to the individual watersheds. Individuals within the group selecting watershed restoration priorities weighted the importance of each factor based on their own judgment and priority rankings were selected by consensus.

Beaver Reservoir watershed was selected as top priority. Selection factors within this 8-digit hydrologic unit watershed included (in no particular order):

- one state extraordinary water resource,
- one imperiled aquatic species,
- drinking water supplies serving a population of about 250,000,
- one state impaired water body,
- numerous state waters of concern,
- three USDA EQIP projects,
- one state 319 priority area, and
- interstate waters of concern.

Lower Little watershed was selected as second priority. Selection factors within this 8-digit hydrologic unit watershed included (in no particular order):

- federal and state scenic river designations,
- five imperiled aquatic species,
- three state waters of concern,
- one USDA EQIP project,
- drinking water supplies serving a population of about 100,000,
- one state extraordinary water resource, and
- interstate waters of concern.

Illinois River watershed was selected as third priority. Selection factors within this 8-digit hydrologic unit watershed included (in no particular order):

- one USDA EQIP project,
- several state waters of concern,
- one state 319 priority watershed,
- two imperiled aquatic species,
- drinking water supplies serving a population of about 18,000, and
- interstate waters of concern.

Strawberry River watershed was selected as fourth priority. Selection factors within this 8-digit hydrologic unit watershed included (in no particular order):

- one imperiled aquatic species,
- one designated state scenic river,
- one Nature Conservancy critical watershed,
- one USDA EQIP project,
- one state impaired water body,
- one state water body of concern, and
- one state extraordinary water resource.

Bayou Bartholomew watershed was selected as fifth priority. Selection factors within this 8-digit hydrologic unit watershed included (in no particular order):

- one state impaired water body,
- one USDA EQIP project,
- one state 319 priority watershed,
- one Nature Conservancy critical watershed, and
- one state wetland restoration area.

Little Red watershed was selected as sixth priority. Selection factors within this 8-digit hydrologic unit watershed included (in no particular order):

- two state water bodies of concern,
- two USDA EQIP projects,
- two imperiled aquatic species,
- one Nature Conservancy critical watershed,
- drinking water supplies serving a population of about 70,000, and
- one state extraordinary water resource.

Cadron watershed was selected as seventh priority. Selection factors within this 8-digit hydrologic unit watershed included (in no particular order):

- one USDA EQIP project,
- one drinking water supply serving a population of about 50,000, and
- one state extraordinary water resource.

Beginning in FY-1999, *Watershed Restoration Action Strategies* to restore the health of those watersheds most in need of attention will be developed and implemented. Specific actions will be developed for conditions in a specific watershed. Attention to the 10 remaining category I watersheds will be included in the long-term schedule following implementation of watershed restoration action strategies developed for the seven FY 1999-2000 priority watersheds.

References

- Arkansas Water Quality Inventory Report 1998, 373 pp.
- Arkansas' Water Quality Limited Waterbodies -303(d) List. 1998, 6pp.
- Regulation Establishing Water Quality Standards for Surface Waters of the State of Arkansas. January 1998, 87 pp.
- Rivers of Life: Critical Watersheds for Protecting Freshwater Diversity, The Nature Conservancy, 1998 Report.
- Mississippi River Alluvial Plain, The Big Woods of Arkansas, The Nature Conservancy

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NRCS	EQIP 1998 FUNDED AREAS
ADNH	CRITICAL IMPERILED FISHES AND MUSSELS
USFWS	WETLAND RESTORATION AREAS
ADH	DRINKING WATER SUPPLY LOCATIONS
FEDERAL & STATE OWNERSHIP MAP	

ARKANSAS 8-DIGIT HYDROLOGIC UNIT AREAS



Figure 1

UNIFIED WATERSHED ASSESSMENT CATEGORIES FOR ARKANSAS

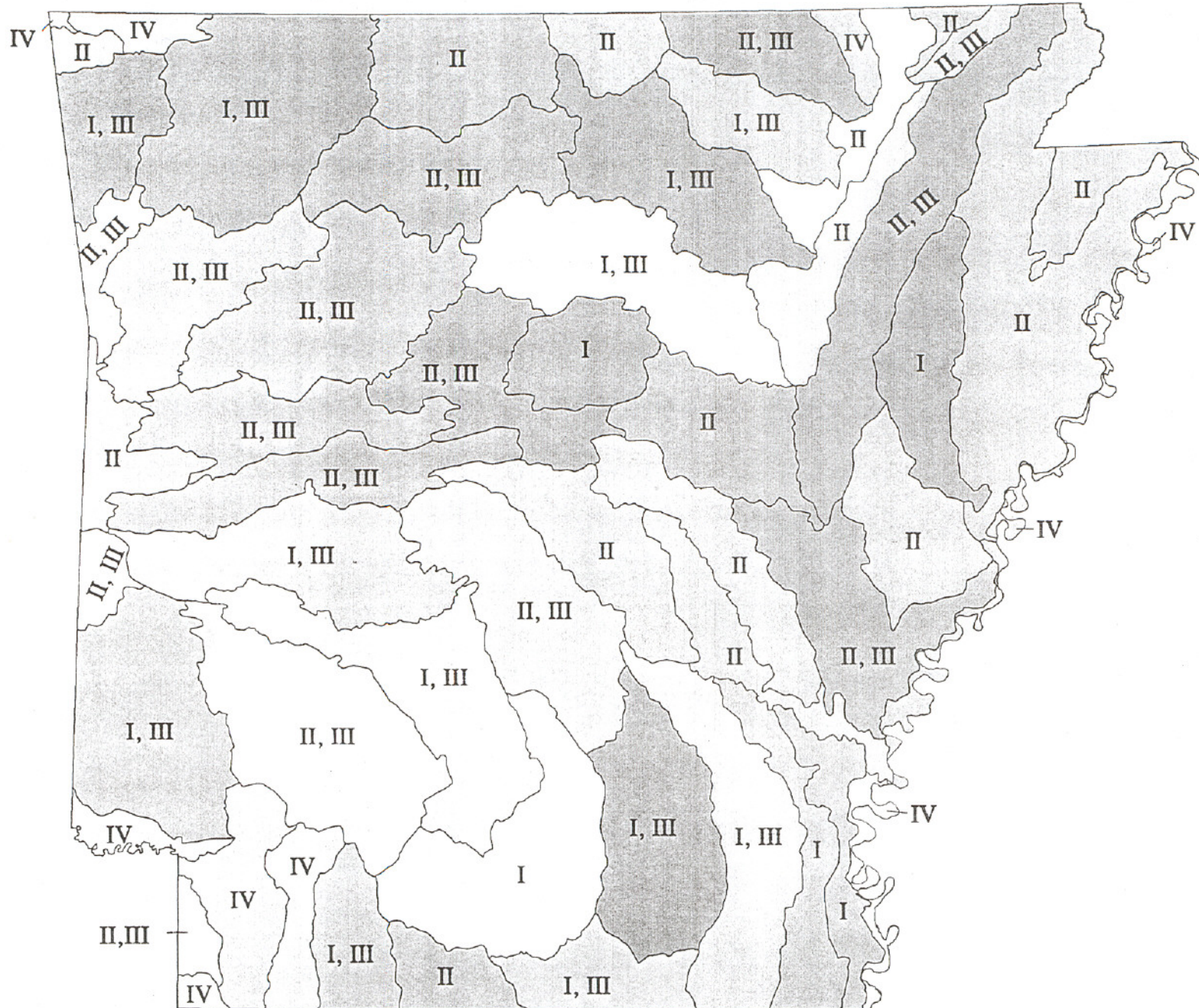


Figure 2

UNIFIED WATERSHED ASSESSMENT PRIORITIES FOR ARKANSAS

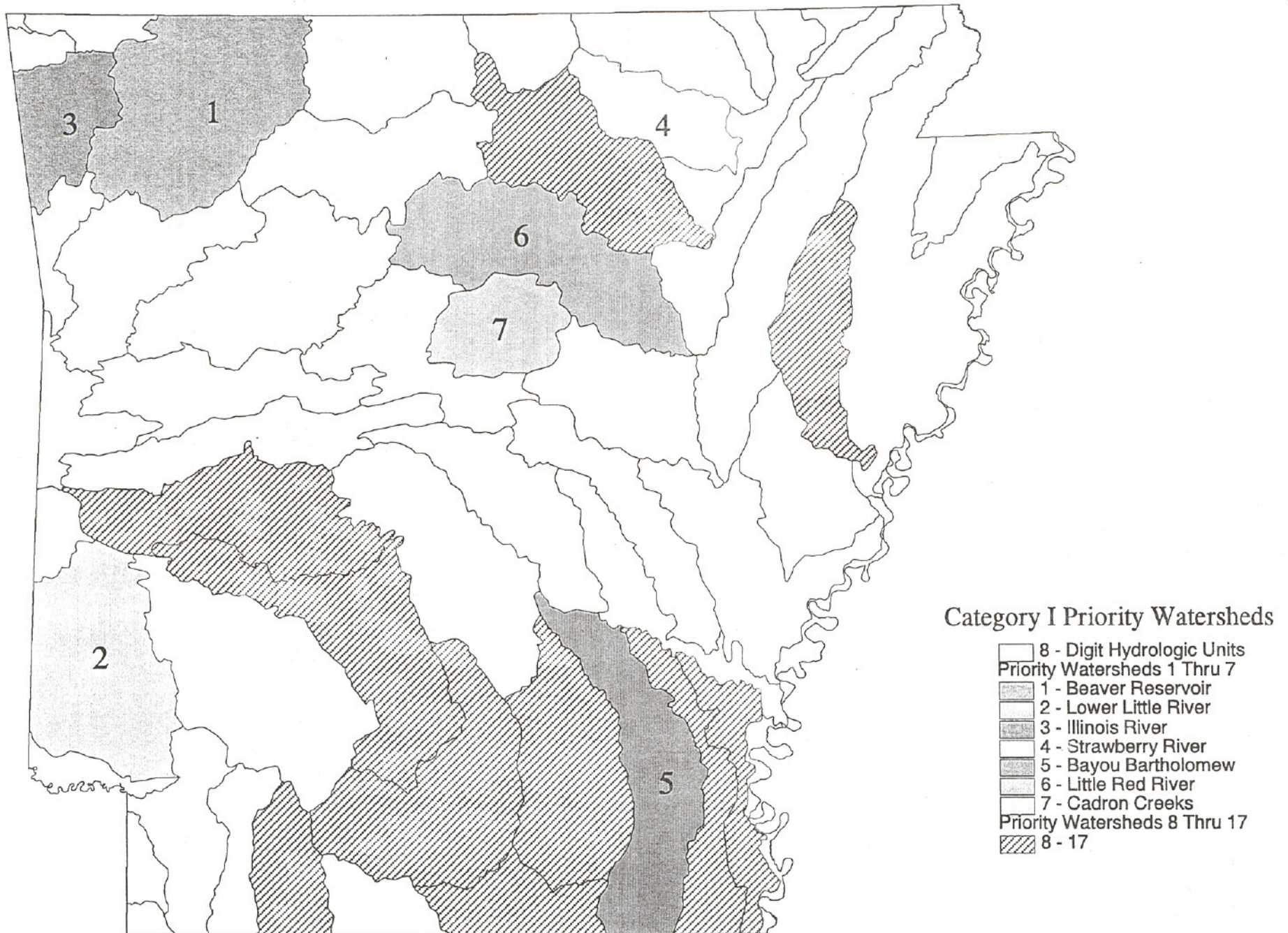
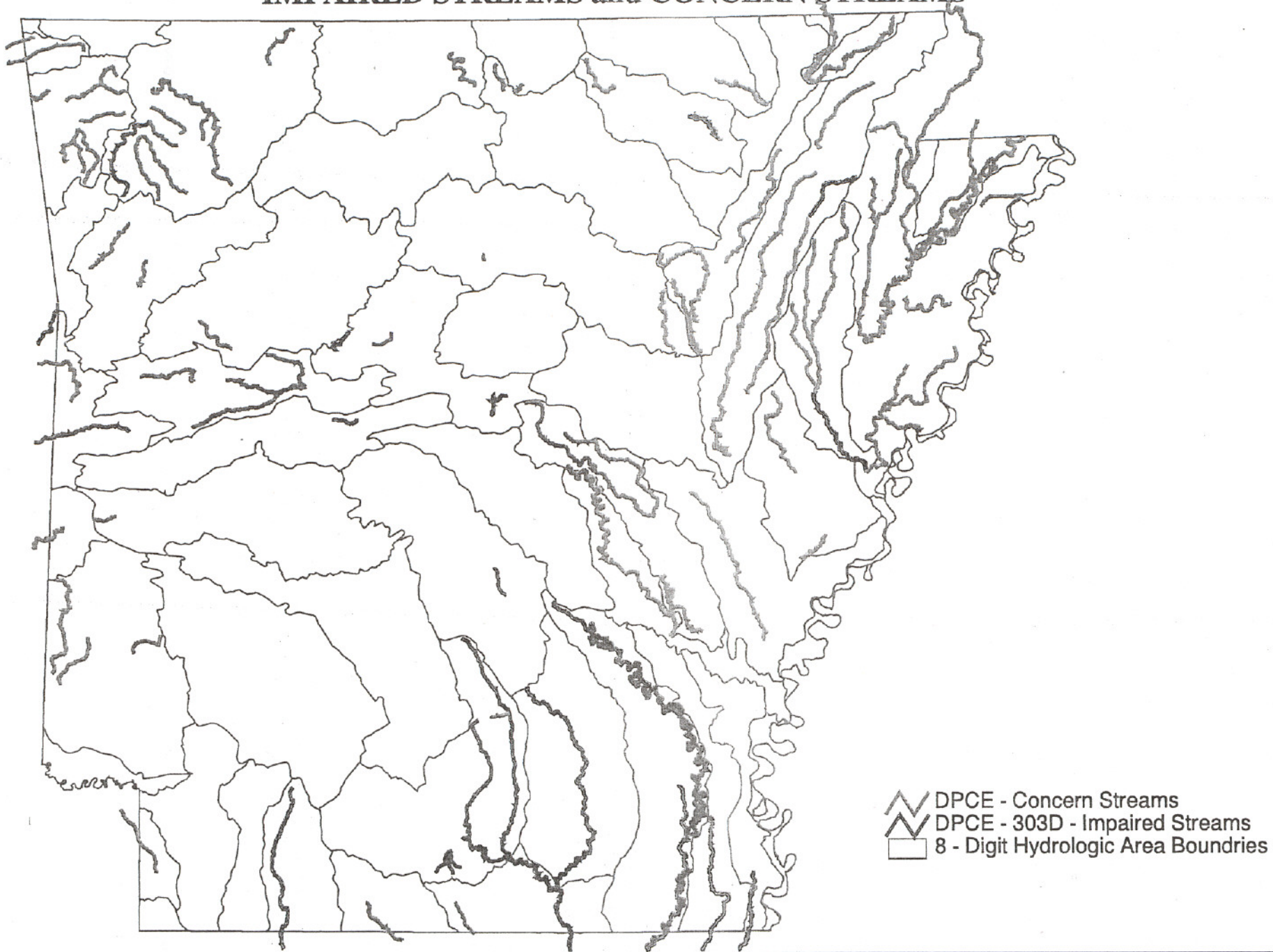


Figure 3

ARKANSAS SOIL & WATER CONSERVATION COMMISSION PRIORITY WATERSHEDS



ARKANSAS DEPARTMENT OF POLLUTION CONTROL & ECOLOGY
IMPAIRED STREAMS and CONCERN STREAMS

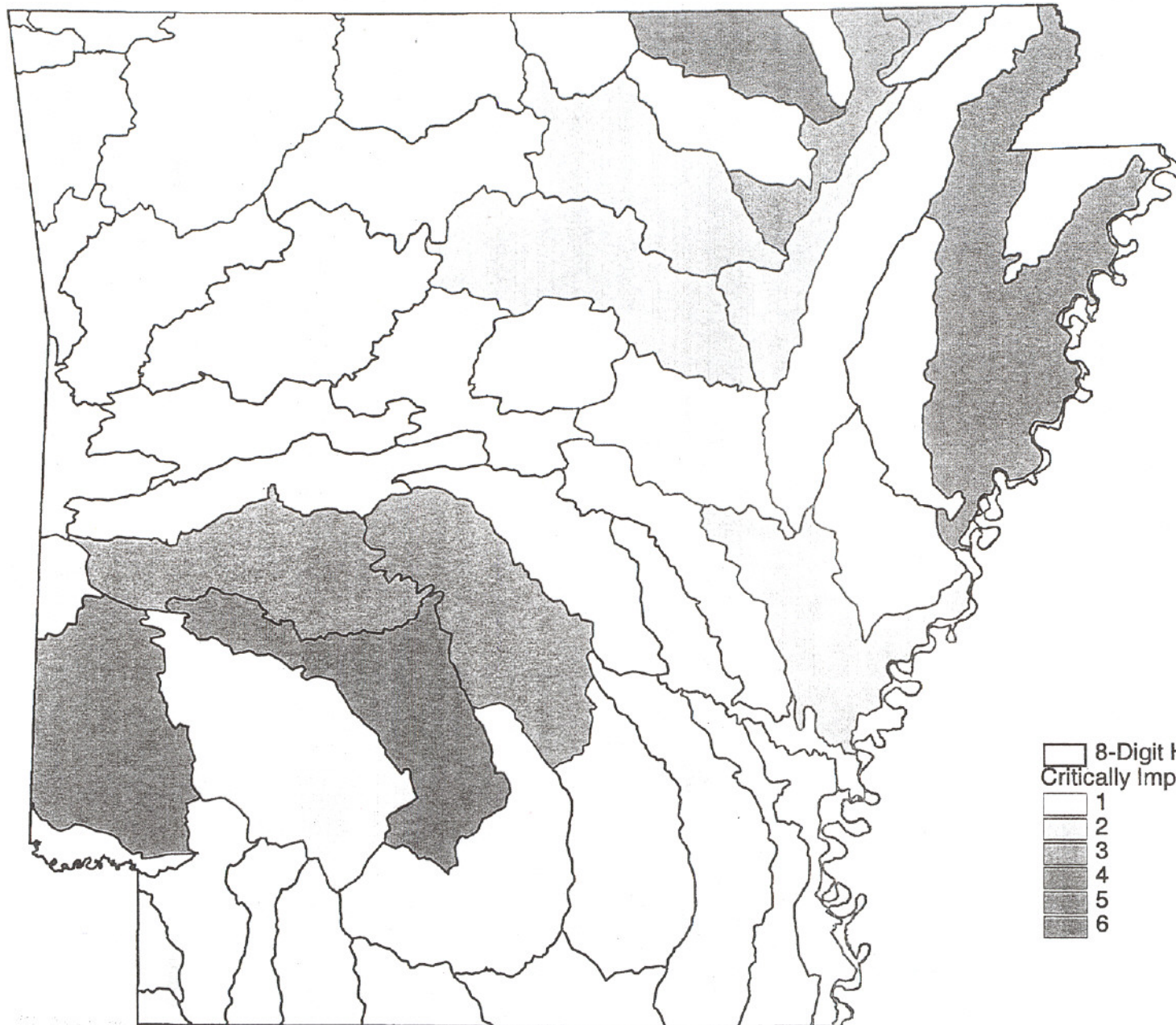


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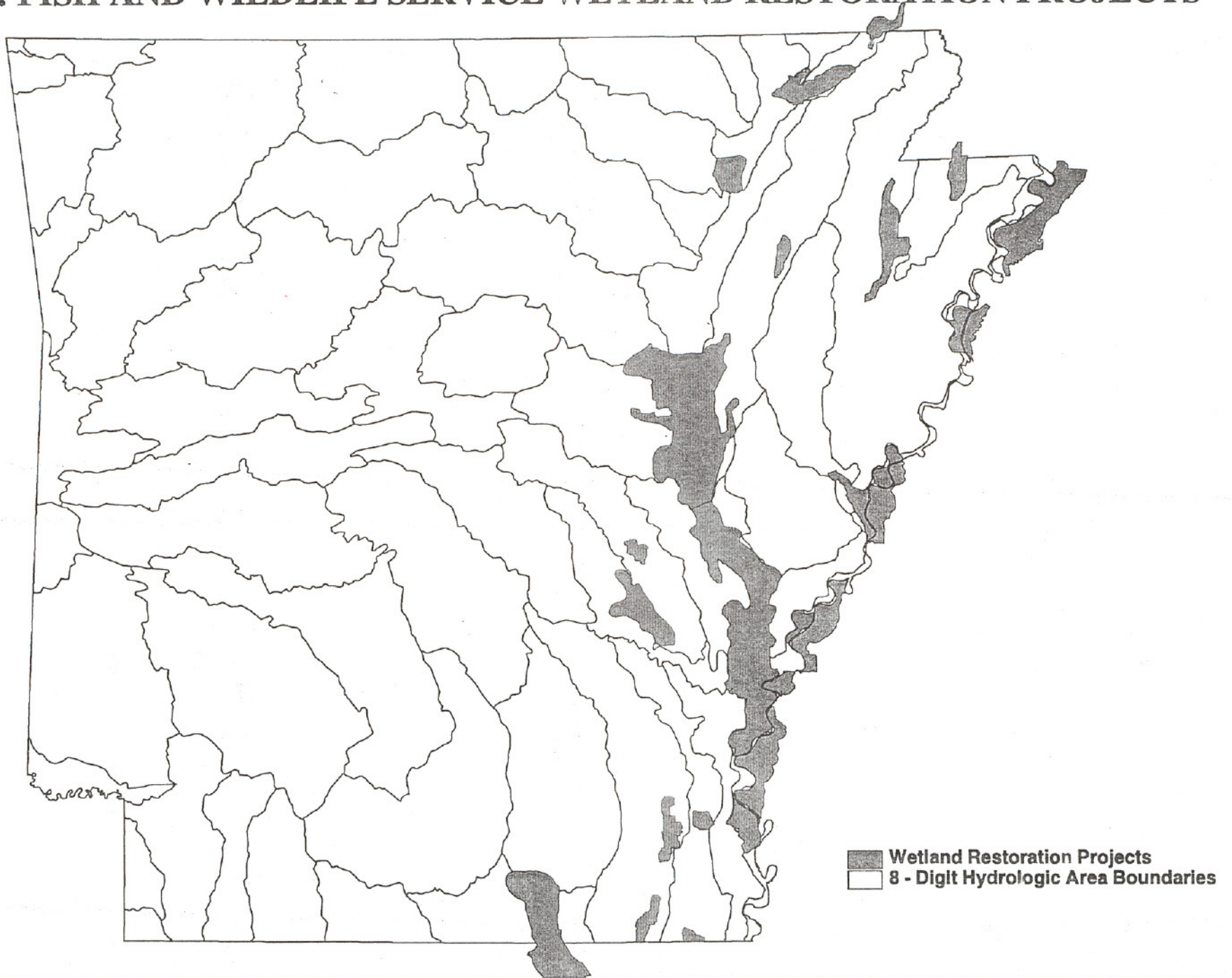


ARKANSAS DEPARTMENT OF NATURAL HERITAGE

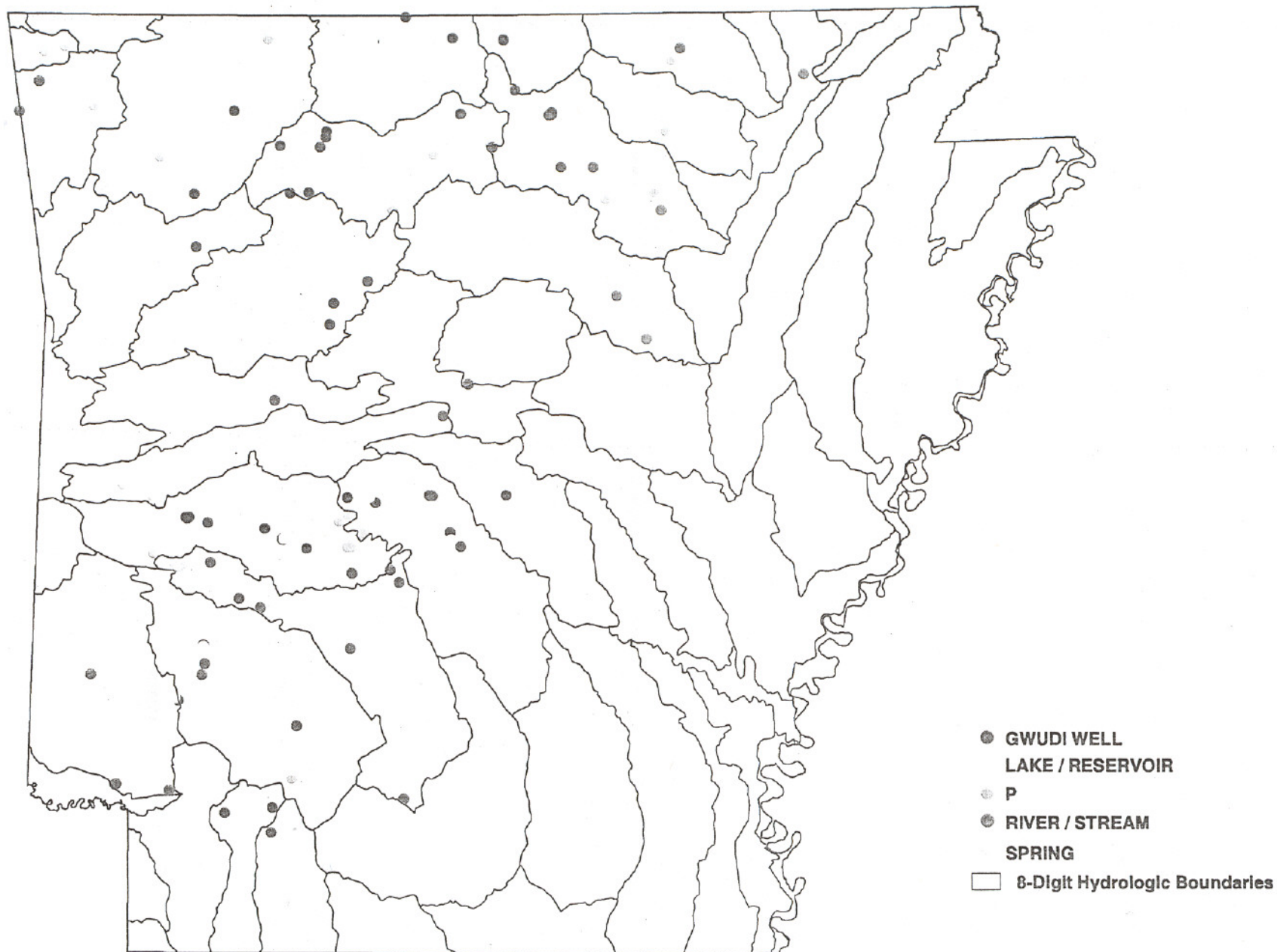
CRITICALLY IMPERILLED FISHES AND MUSSELS



U.S. FISH AND WILDLIFE SERVICE WETLAND RESTORATION PROJECTS



ARKANSAS DEPARTMENT OF HEALTH DRINKING WATER SUPPLIES



FEDERAL AND STATE LAND OWNERSHIP

